STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0559-AOP-R7 AFIN: 33-00013

1. PERMITTING AUTHORITY:

   Arkansas Department of Environmental Quality
   5301 Northshore Drive
   North Little Rock, Arkansas 72118-5317

2. APPLICANT:

   Unilin Flooring NC, LLC
   State Highway 9 Spur
   Melbourne, Arkansas 72556

3. PERMIT WRITER:

   Patty Campbell, PE

4. PROCESS DESCRIPTION AND NAICS CODE:

   NAICS Description: Other Millwork (including Flooring)
   NAICS Code: 321918

5. SUBMITTALS:

   5/16/2012 and 8/28/12

6. REVIEWER'S NOTES:

   Unilin Flooring NC, LLC owns and operates a hardwood flooring mill, Columbia Flooring Division (Columbia Flooring), located at State Highway 9 Spur in Melbourne, Izard County, Arkansas 72556. This permitting action is necessary to modify the permit as follows:

   1. HAPs in the Emission Summary table were changed from individual named HAPs to "Any Single HAP" and "Total HAPs";
   2. Add recordkeeping requirement to calculate and maintain monthly Plantwide HAP emissions for affected sources SN-05, 06, 08, 09, 10, 11, 17, 19 and 21, which demonstrate that HAP emissions must be less than 10.00 tpy of any single HAP and 25.00 tpy of total combined HAPs emitted per rolling 12 month period, Plantwide Condition #7;
   3. Clarify operating hours recordkeeping for Boilers SN-05 and SN-06 and install non-resettable meters, if non-resettable meters are not already installed, SC #11;
   4. Re-install a small natural gas-fired oven SN-11 for curing water based stains;

5. Revise hourly VOC and HAP emission limits to reflect a maximum allowable content limit lb/gal for SN-08, 09, 10 and 21, SC #28;
6. Revise VOC and HAP annualized emission rates for SN-08, 09, 10 and 21, SC #21 and #22;
7. Revise TLV Table and other TLV limits for SN-08, 09, 10 and 21; and
8. Revise maximum allowable *hourly* emissions for the lumber drying kilns (SN-17) to reflect the total emissions measured over the entire charge (full kiln) at a minimum 24-hour drying cycle. This revision does not change annual VOC or HAP emissions.

Total permitted annual emission changes associated with these modifications are: 0.1 tpy (tons per year) PM, 0.1 tpy PM_{10}, 0.1 tpy SO_2, 77.2 tpy VOC, 0.6 tpy NO_X, <10.00 tpy any Single HAP and <25.00 tpy Total HAPs. Individual HAPs were changed to Total HAPs.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no active or pending air enforcement issues.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
b. Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list, or*
- *CO_2e potential to emit ≥ 100,000 tpy and ≥100 tpy/≥250tpy of combined GHGs?*

If yes, explain why this permit modification is not PSD.

9. GHG MAJOR SOURCE (TITLE V):

Indicate one:

☐ Facility is classified as a major source for GHG and the permit includes this designation
☒ Facility does not have the physical potential to be a major GHG source
☐ Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: _____

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
05 & 06	HAPs	NESHAP Subpart JJJJJJ

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
19	HAPs	NESHAP Subpart ZZZZ

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Non-Criteria Pollutants:

This permit contains a TLV table for non-criteria pollutants. Modeling was used to determine the permitted emission rates for ranges of non-criteria pollutants (grouped by TLV) that pass the PAER or PAIL. Therefore, modeling of specific non-criteria pollutants was not performed.

HAP-containing materials are allowable for use at the facility within the parameters listed below. Any HAP, which is defined as a volatile organic compound (VOC), may be used within the maximum content limits described in the following TLV lookup table:

Maximum Allowable Individual HAP Content Limit* (lb/gal)	Minimum Allowable TLV of Each HAP (mg/m^3)
1.0	104
2.0	197
3.0	291
4.0	384
5.0	478
6.0	571
7.0	665
8.0	758
9.0	852
10.0 = Highest HAP content	945

Note: Intermediate values can be obtained by interpolation of the above table or by using the following equation to determine the maximum content limit for individual HAPs.

$$\text{Content Limit for VOC or HAP (lb/gal)} = \frac{\text{TLV} - 15}{93.5}$$

Where: TLV (Threshold Limit Value) is in units of milligrams per meter cubed (mg/m^3). For example, coating materials which contain xylene shall not have xylene content greater than 2.80 lb/gal based on a TLV of 434 mg/m^3.

The permittee shall maintain records of the ACGIH TLV values as listed on current MSDS forms or in the 2012 ACGIH TLV handbook of Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) for each HAP-containing or air contaminant material used at the facility. The concentration of each HAP and air contaminant in lb/gal as applied and the corresponding TLV should be noted on these records. These records shall be maintained in a spreadsheet, database or other well organized format. The permittee shall update the records by the fifteenth day of the month following the month to which the records pertain. The permittee shall keep the records onsite, and make the records available to Department personnel upon request.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acetone	1187.48	130.62	26.35	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

each year modeled. A summary of these results is also provided in Table 10 of Appendix B.

Table 6.3-1: Highest 2nd-High Modeling Results for 24-hour Averaging Period

Source ID	2006 ($\mu g/m^3$)	2007 ($\mu g/m^3$)	2008 ($\mu g/m^3$)	2009 ($\mu g/m^3$)	2010 ($\mu g/m^3$)
SN05 Deltak Boiler	0.05	0.06	0.06	0.06	0.07
SN08 Stains	131.71	140.14	151.22	219.33	203.46
SN09 Sealers	131.71	140.14	151.22	219.33	203.46
SN10 Topcoats	149.80	160.81	201.72	252.06	262.51
SN11 Curing Oven	0.00	0.00	0.00	0.00	0.00
SN17 Drying Kilns	85.91	65.08	81.61	84.56	100.41
SN19 Generator	0.03	0.02	0.02	0.02	0.03
SN21 Filler	131.71	140.14	151.22	219.33	203.46
Sum of Individual Ambient Impacts	630.92	646.39	737.08	994.70	973.42
All Combined (SRCGROUP VOCHAP)	494.34	532.51	583.27	756.23	809.77

Other Modeling: None
Odor: None
H_2S Modeling: None

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 02, 03	EF from informal testing event performed at SN-03 on 8/11/2003 & engineering judgment	01/04 Test result = 0.0016 grains/dscf PM conservatively used EF = 0.01 gr/dscf PM	SN-01 Pneumafil Baghouse #135-448-10 Fabric Filter SN-02, 03 Carter Day Baghouses #RFJ-376 Fabric Filters	99.9% each	Emissions calc based on exhaust air flow of individual baghouses @8,760 hrs/yr Rated air flow SN-01 = 17.06 ft/sec = 20,500 scfm SN-02, 03 = 20.07 ft/sec = 20,100 scfm 100% of PM is PM_{10}.

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
05/06	Criteria EF from test HAP EF from AP-42 Chapter 1.6 Tables 1.6-3[1] & 1.6-4[2] (9/03)	<u>lbs/hr</u> PM/PM_{10} = 25.0 SO_2 = 1.0 VOC = 0.7 CO = 21.7 NO_X = 18.3 <u>lbs/MMBtu/hr</u> [1]Acrolein – 4.00E-03 [2]Arsenic – 2.20E-05 [1]Benzene – 4.20E-03 [1]Chlorine – 7.90E-04 [1]Formaldehyde – 4.40E-03 [1]HCl – 1.90E-02 [2]Lead – 4.80E-05 [2]Manganese – 1.60E-03 [1]Dixions – 1.70E-06 [1]Furans – 1.90E-09 [1]Styrene – 1.90E-03	Zurn flyash arrestor, multi-clone	80-90% 85% for PM 63% for PM_{10}	Wood fired Boilers SN-05 – Deltak Boiler = <u>47.64 MMBtu/hr</u> SN-06 – Keeler Boiler = 37.5 MMBtu/hr Boilers operated mutually exclusive, 1 @ a time. SN-05 @ 8,760 hrs/yr SN-06 @ 1 hr/yr Actual is about 80/20 but conservatively estimated larger boiler SN-05 ops 100% SN-06 HAPs lb/hr
07, 08, 09, 10, 21	Mass Balance, MSDS, usage and TLV Lookup Table	<u>Max VOC content limit</u> 6.54 lb/gal Stains (SN-08) 2.53 lb/gal (SN-9, 10 &21) VOC limited to 85 tpy & <u>Max HAP content limit</u> 5.992 lb/gal Stains (SN-08) 0.54 lb/gal Sealers (SN-9) 0.30 lb/gal Topcoat & Filler (SN-10 & 21)	None	N/A	<u>VOC & HAP-containing Materials in Finishing Dept.</u> Assumes 100% of VOCs & HAPs emitted Facility can only use either water or solvent based stain at a time
11	AP-42 Tables 1.4-1 & -2* (07/98)	<u>(lb/MMscf)</u> PM/PM_{10} –7.6 SO_2 – 0.6 VOC – 5.5 *CO – 84 *NO_X – 100	None	N/A	1.18 MMBtu/hr Natural gas is <u>only</u> fuel used.
17	VOC[1]- Brian W. Beakler, et al "Quantification VOCs kin-drying Red Oak & White Oak Lumber" (11/07)	Lumber Kiln Max Thruput = 50 MMBF lumber / 12 rolling mos. 47,833 BF/hr ave. <u>Lb/mbf</u> VOC = 0.256[1]	None	N/A	@8,760 hrs/yr, 12 kilns, limited by throughput MBF x 1000 = MMBF Kilns steam heated 1 – worst case, red

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Formaldehyde[2] & Methanol[2] – OR State Univ. "Small Scale Kiln Study Utilizing Ponderosa Pine, . . . White Fir . . ." (9/20/00)	Formaldehyde = 0.0028[2] Methanol = 0.122[2] Hourly rate based on 24-hr drying cycle Formaldehyde and methanol are naturally occurring HAPs			oak range 0.154 – 0.356 = 0.256 lb/mbf VOC (both white & red are dried) 2 – used white fir emission factor since oak not included
19	AP-42 Chap 3.4-1 (10/96)	lbs/hp-hr PM/PM_{10} = 0.0007 SO_2 = 0.00405[1] VOC = 0.000705 CO = 0.0055 NO_X = 0.0240	None	N/A	Emergency Diesel Generator Engine 981 hp [Large] @1000 hrs/yr max 100% of PM is PM_{10}. [1] Sulfur content of diesel fuel is 0.5% x 0.00809 lbs/hp-hr = 0.00405 lbs/hp-hr EF
20	AP-42 Chap 9.9.1-1 (03/03)	lbs/ton PM = 0.086 PM10 = 0.029 Max 1 truck/hr @ max 25 tons/truck Max 100 trucks/mo = 2,500 tons/mo x 12 mos = 30,000 tons/yr	None	N/A	AP-42 is for Grain Truck Shipping as substitute for wood waste. Facility can only load one truck per hour. Historical data (last 5 yrs show max 96 loads/mo in 10/07.

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
05 Boiler	PM	5 and 202	Once every 5 years or if test fails, two consecutive annual tests until boiler passes. Next test, no later than November 16, 2015.	§19.702 and §19.901
	PM_{10}	201A and 202		
	CO	10		
	NO_X	7E		

SN	Pollutants	Test Method	Test Interval	Justification
06 Boiler	PM	5 and 202	One-time Test due no later than 180 days (August 7, 2012) after issue of Permit #0559-AOP-R6	§19.702 and §19.901
	PM_{10}	201A and 202		
	CO	10		
	NO_X	7E		

15. MONITORING OR CEMS:

There are no CEMS or other monitoring equipment.

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
05	Performance Tests	PM, PM_{10}, CO and NO_X limits	Every 5 years or if failed 2 consecutive successful tests	Y
06	Performance Test	PM, PM_{10}, CO and NO_X limits	One-time	Y
05/06	Boilers Manufacturer's Specification	Maintain for life of units	On-going	N
05/06	Hourly Operation of SN-05 & 06	Max simultaneous operation of 1-hour during periods of start-up/shutdown. Records shall indicate date & time of start-up and shutdown for each boiler	Monthly	N
05/06	Multi-clone fly ash arrestors Manufacturer's Specification	Maintain for life of units	On-going	N

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
05/06	Tune-ups	Must be completed as specified in §63.11223 (b)(1) through (7).	Biennially or no more than 25 months after previous tune-up. If unit not operating on the required date, tune-up must be conducted within 1 week of start-up	N
05/06, Facility	Energy Assessment performed by a qualified Energy Assessor	Must be completed according to §63.11214(c.) and Table 2 to Subpart JJJJJJ of Part 63, item #4, (1) through (7) and be performed by March 21, 2014.	One time	N
05/06, Facility	Energy Assessment (above)	Maintain Report for life of Facility	On-going	N
05/06	Initial Notification of Compliance Status	Initial due by 9/17/2011. Include the §63.11225(a)(4) certifications.	Initial, one time	Y
05/06	Annual Notification of Compliance Status with NESHAP Subpart JJJJJJ	Include the §63.11225(a)(4) certifications. Include completion of boiler tune-up, date, signed, as appropriate, per §63.11214(b)	Annually, prepare by 3/1 each year and received by ADEQ by 3/15 each year	Y
05/06	Work practices, emission reduction measures, and management practices required by §63.11214	• Identify Boiler, date of tune-up, tune-up procedures followed, manufacturer's specs • Document fuel type • Occurrence and duration of malfunction • Corrective action taken	Annually	N
7-10 & 21	VOC, HAP & acetone content, MSDSs, usage, mass balance	85.0 tpy VOC 10.28 tpy acetone 6.00 tpy Any Single HAP 13.0 tpy Total HAPs	Monthly Material Balance	Y
17	Lumber Kiln-dried Throughput	50 million (MM) board feet (BF) of Lumber per 12 month rolling totals	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
19	Operating Hours of Diesel Generator	1,000 operating hours per 12 month rolling totals	Monthly	N
19	Diesel Fuel and MSDSs	Combust diesel fuel with a sulfur content no greater than 0.5% by weight	On-going	N
20	Wood Waste Truck Loadout	2,500 tons of Wood Waste per month [equivalent to 100 trucks loaded per month] 30,000 tons of Wood Waste per 12 month rolling totals	Monthly	Y
Plantwide Facility	Any Single HAP and total combined HAPs	HAP emissions must be less than 10.00 tpy of any single HAP and 25.00 tpy of total combined HAPs emitted per rolling 12 month period	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01, 02, 03	5%	§18.501 and A.C.A.	Weekly Observation
05, 06, 19	20%	§19.503 and A.C.A.	Daily Observation
11	5%	§18.501 and A.C.A.	ADEQ Annual Inspection
20	10%	§18.501 and A.C.A.	Weekly Observation

18. DELETED CONDITIONS:

No conditions were deleted.

19. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	A	Emissions (tpy)						
		PM/ PM_{10}	SO_2	VOC	CO	NO_x	HAPs	
							S	Tot
One Diesel Fuel Storage Tank, 10,000 gallon capacity (formerly SN-18)	A-3	0.0	0.0	0.003	0.0	0.0	-	2.80E -04
Five Electric UV Ovens	A-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Four Wood Storage Silos	A-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0559-AOP-R6

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Paula Parker, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-20-12

Facility Name: UnilinFlooring NC, LLC
Permit Number: 0559-AOP-R7
AFIN: 33-00013

$/ton factor	22.97	Annual Chargeable Emissions (tpy)	337.68
Permit Type	Modification	Permit Fee $	1696.1048

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	73.84
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM	☑	134.1	134.2	0.1	0.1	134.2
PM_{10}	☐	133.3	133.4	0.1		
SO_2	☑	6.3	6.4	0.1	0.1	6.4
VOC	☑	17.8	95	77.2	77.2	95
CO	☐	97.6	98.1	0.5		
NO_X	☑	91.2	91.8	0.6	0.6	91.8
Acrolein	☐	0.83	0	-0.83		
Arsenic	☐	0.01	0	-0.01		
Benzine	☐	0.88	0	-0.88		
Chlorine	☑	0.16	0	-0.16	-0.16	0
Dioxin/Furans	☐	0.01	0	-0.01		
Formaldehyde	☐	0.99	0	-0.99		
Hydrogen Chloride	☑	4	0	-4	-4	0
Lead	☐	0.01	0	-0.01		
Manganese	☐	0.33	0	-0.33		
Methanol	☐	3.05	0	-3.05		
Styrene	☐	0.4	0	-0.4		
Combined HAPs	☐	0.08	25	24.92		
Acetone	☑	10.28	10.28	0	0	10.28

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Single HAP	☐	3.05	10	6.95		
10/10/2012	☐	0	0	0		